

Value-based healthcare is the equitable, sustainable and transparent use of the available resources to achieve better outcomes and experiences for every person.



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# Defining Value-based Healthcare in the NHS

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How to cite: Hurst L, Mahtani K, Pluddemann A, Lewis S, Harvey K, Briggs A, Boyle A, Bajwa R, Haire K, Entwistle A, Handa A and Heneghan C. Defining Value-based Healthcare in the NHS: CEBM report. <https://www.cebm.net/2019/04/defining-value-based-healthcare-in-the-nhs/>

## Foreword

Evidence-based medicine describes the need for *“the more thoughtful identification and compassionate use of individual patient’s predicaments, rights, and preferences in making clinical decisions about their care.”*<sup>1</sup> 1997 saw the Centre for Evidence-based Medicine publish both *Evidence-based Medicine, How To Practice and Teach It*<sup>2</sup> and *Evidence-based Healthcare, How To Make Health Policy and Management Decisions*.<sup>3</sup> The latter used the term **value based healthcare** for the first time in its second edition in 2001,<sup>4</sup> emphasising *“those who pay for healthcare will require that interventions are provided only when their outcomes give greater benefits than any other alternative use of resources.”*

The Centre has, over the years, demonstrated and advocated against the potential harms of “too much medicine”<sup>5</sup> and poor regulation of treatments<sup>6</sup> and research.<sup>7</sup> It has used evidence to show where healthcare resources may be wasted (e.g., Tamiflu<sup>8</sup>) and costs could be saved (e.g. open prescribing<sup>9</sup>). All of these examples show how evidence can be used to increase value in the use of healthcare resources.

Shortly after the Centre was established, the election of the Tony Blair government in 1997 led to a decade of unprecedented growth in NHS investment. Decision makers found all the pressure was off. It was not until the culture change induced by the Lehman Brothers collapse in 2008 that population value became an explicit element in decision making.

Today, *“up-to-date decision-making in health care around the world”* must consider value as well as evidence. Evidence-based medicine and evidence-based healthcare have been two sides of the same coin for twenty years. So, too, are personal value and population value. Value for a population is determined by both the allocation and the use of resources to optimise health and minimise inequity. This report explores the key issues and brings together both evidence and value in decision making.

Sir Muir Gray  
Oxford  
March 2019

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### Summary

'Value' is gaining prominence in healthcare systems facing increased demand for services with limited resources. However, value-based healthcare has not yet been embraced as part of the everyday language and business of the NHS in the way that evidence-based healthcare has.

The absence of an agreed definition of 'value-based healthcare' in the NHS, the lack of skills required to deliver value-based healthcare and a clear understanding of the barriers to effective development and implementation inhibits the health system in addressing problems such as overdiagnosis, too much medicine, poor allocation of resources and the introduction of inadequately evidenced technologies

This report sets out a route to defining value-based healthcare in the NHS, an assessment of the barriers to its development, and an understanding of what skills and training would support implementation. A stakeholder workshop informs the report with patients and leaders across the NHS and value sector.

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***Value-based healthcare is the equitable, sustainable and transparent use of the available resources to achieve better outcomes and experiences for every person.***

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## Seven Key recommendations

For patients and professionals in the NHS who are interested in increasing value at a local or national level:

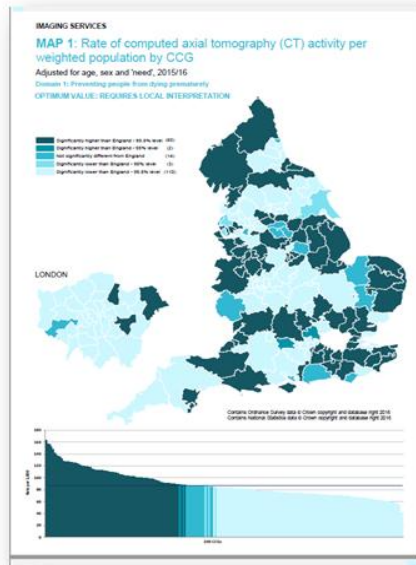
1. Adopt a common terminology so that every person involved in healthcare, including patients, has a shared understanding of what value-based healthcare is.
2. Identify and communicate unwarranted variations in healthcare to every person, ensuring genuine transparency about why value-based healthcare is essential, and why realistic decisions based on the available resources are required.
3. Recognize and develop strategies to overcome barriers to implementing value-based healthcare at the individual, team and organisational level.
4. Build capacity and capability to translate and implement the best available research evidence into effective action to increase value.
5. Develop the necessary skills in value-based healthcare by training staff in how to measure outcomes, patient experience and resource use
6. Ensure programmes to increase value are monitored and evaluated to provide better evidence about what is and isn't effective
7. Facilitate better communication and dissemination about what works in increasing value at a local and national level.

## Why we need to consider value in healthcare?

The relationship between the resources used and outcomes achieved in healthcare is under greater scrutiny. Resources are increasingly outstripped by demand for healthcare, <sup>[10]</sup> driven by changing population demographics, innovation and new technologies, patient expectations and an increase in multi-morbidity <sup>[11]</sup>. Adding to this pressure to meet ever-increasing demands, the NHS is underfunded <sup>[12]</sup> and overstretched. <sup>[13]</sup> Yet, evidence suggested that resources are all too often wasted. <sup>[14]</sup>

### Unwarranted Variations

“Unwarranted Variations” in healthcare describe differences in resource allocation, resource use or outcomes in health that aren't explained by patient preference or illness. <sup>[15]</sup>



In Clinical Commissioning Groups (CCGs) in England, the rate of CT investigations varied from 34 to 163 per 1,000 weighted population. A **4.6-fold** difference between CCGs.

It is currently not clear what the level of CT activity for a population should be, but both underuse and overuse of CT scanning could be harmful to patients (high doses of radiation are associated with CT scanning).

***'The magnitude of variation for many of the indicators in this Atlas may surprise some people. In a context of evidence-based medicine and guidelines, how is it possible that the degree of variation in diagnostic testing is so great?'***

[The 2nd Atlas of Variation in NHS Diagnostic Services in England](#)

Evidence that unwarranted variations exist in the NHS is set out in the NHS Atlas of Variation [16]. Unwarranted variations are associated with overuse or underuse of health technologies and care. [17] Underuse and overuse of tests and treatments is a global phenomenon. [18] [19] [20] And while the NHS has mechanisms to protect against this; it is not immune. [21] Unwarranted variations in care exist, persist and affect all aspects of care. Lord Carter's review of the 'operational productivity and performance in English NHS acute hospitals' estimated that if we reduced unwarranted variation at least £5bn of the £55.6bn spent annually by acute hospitals could be saved. [22]

**Unwarranted variations show where NHS resources might be wasted, where patients may be harmed through underuse or overuse of care and highlight opportunities to increase value.**

**CASE STUDY:** Openprescribing.net, from the EBM Datalab, monitors patterns of prescribing for doctors, managers and anybody involved in the NHS in England to use. The research has identified that:

- NHS doctors in England are prescribing more and stronger opioids and that there are unwarranted geographical variations in the prescribing patterns of these drugs [23]
- Although doctors are generally prescribing fewer treatments from a list identified as "low value" by NHS England, the overall cost of prescribing them has increased and prescribing varies widely by treatment, geographic area and individual practice [24]
- The extent and speed of implementation of new prescribing guidelines on a group of antibiotics for England (aiming to limit increased antimicrobial resistance) varied across the country, by clinical commissioning group [25]

## The Right Thing to Do

The NHS is a tax-funded resource and therefore has a moral obligation to use its resources as efficiently and effectively as possible. A survey of public attitudes found that for people who were dissatisfied with the NHS, the top three reasons given related to access and resourcing - 33 per cent identified waste as a reason. <sup>[26]</sup>

Furthermore, the NHS must address health inequalities in access and outcomes. And improving outcomes for patients presents opportunities for greater clinical stewardship in the management of resources. <sup>[27]</sup> Increasing value will reduce waste, improve health outcomes and reduce health inequalities with the available resources.

## Why do we need to define value-based healthcare for the NHS?

Interest in value-based healthcare has increased significantly in the NHS with several high profile programmes set up to address unwarranted variations and their causes. For example, “Getting it Right First Time” <sup>[28]</sup> and “RightCare” in England. <sup>[29]</sup> “Realistic Medicine” in Scotland <sup>[30]</sup> and “Prudent Healthcare” in Wales <sup>[31]</sup> all aim to reduce waste and centre patients in decision making.

<b>‘Getting it Right First Time’</b>	“A national programme designed to improve the quality of care within the NHS by reducing unwarranted variations.” <sup>[32]</sup>
<b>‘NHS RightCare’ in England</b>	<p>“The NHS RightCare delivery methodology is based around three simple principles of working with local systems;</p> <ul style="list-style-type: none"> <li>● Diagnose the issues and identify opportunities with data, evidence and intelligence</li> <li>● Develop solutions, guidance and innovation</li> <li>● Deliver improvements for patients, populations and systems” <sup>[33]</sup></li> </ul>
<b>‘Realistic Medicine’ in Scotland</b>	<p>“Realistic medicine aims to improve care and treatment it offers by:</p> <ul style="list-style-type: none"> <li>● “Sharing decision making between health professionals and patients</li> <li>● Providing a personalised approach to care</li> <li>● Reducing harmful and wasteful care</li> <li>● Collaborative work between health professionals to avoid duplication and provide a joined up care package that better meets needs and wishes” <sup>[34]</sup></li> </ul>
<b>‘Prudent Healthcare’ in Wales</b>	<p>“Healthcare that fits the needs and circumstances of patients and avoids wasteful care”.</p> <p>“Any service or individual providing a service should:</p> <ul style="list-style-type: none"> <li>● Achieve health and wellbeing with the public, patients and professionals as equal partners through co-production</li> <li>● Care for those with the greatest health need first, making the most effective use of all skills and resources</li> <li>● Do only what is needed, no more, no less; and do no harm</li> <li>● Reduce inappropriate variation using evidence-based practices consistently and transparently.” <sup>[35]</sup></li> </ul>

But value-based healthcare is far from fully embedded in the NHS. Evidence suggests that the adoption of programmes to increase value to date has been piecemeal<sup>[36]</sup> and that their projected impact may have been exaggerated.<sup>[37]</sup> Case studies show that NHS Trusts seeking to increase value take different approaches which can vary from small innovations to whole scale systemic changes [38].

The NHS Constitution enshrines that ‘The NHS is committed to providing best value for taxpayers’ money’ [39]. Yet, there is no agreed consensus on what defines value in the NHS and what “value-based” healthcare in this context means.

The most well-known definition of value is ‘the health outcomes achieved per dollar spent’. [40] but this description has limitations in the context of universal healthcare systems funded through social insurance or taxation. Focusing only on funds spent on each patient’s cycle of care does not take account of the available resources and how they are allocated across the whole population.

An essential component of value-based healthcare in the NHS must be the process of making judgements about the allocation and use of resources. At a national level, the NHS has systems of resource allocation in place, such as the National Institute for Health and Care Excellence (NICE) and a national formula to weight the distribution of financial resources. However, decisions about resource allocation are also required at an organisation and individual (patient) level. Daily value decisions are taken by NHS commissioners, managers and by clinicians, although they may not be recognised as such. NHS clinicians incorporate evidence about effectiveness into their decision making but do not yet routinely consider resource allocation and opportunity costs in their decisions. Any definition of value, therefore, must be applicable to, the range of stakeholders active in the system and take into account the role of resource allocation.

To address this, technical, allocative and personal aspects of value in the NHS have been described,<sup>[10]</sup> but each of these terms require further explanation to be clearly understood.

**There are no consistent definitions of value or value-based healthcare in widespread use that are succinct and take into account that “resource use” in the NHS incorporates both the application and the allocation of resources to achieve health outcomes.**

Engagement with value-based healthcare has not been as widespread in the NHS and research as might be expected, we believe in part because there is no clarity about what value-based healthcare means and how it applies to decision making. Further, the barriers to value-based healthcare are poorly delineated and understood, and there is a lack of clarity about the knowledge, skills and training required to develop and deliver value-based change.

## Our approach

We invited a range of stakeholders with an interest and experience in healthcare value and the NHS (commissioners and providers, academics, patients, think tanks and a healthcare value social enterprise) to a workshop to address these issues. Emerging themes were captured to answer three core questions:

1. What do we mean by value in the NHS?
2. What are the key challenges and barriers to value-based healthcare in the NHS? and
3. What skills and training are needed to deliver it?

## 1. Meaning of value in the NHS

**“Resource Use” not “Costs”:** The term “costs” can have economic and negative associations.

“Resource use” was preferred because not all “costs” are financial. Patient care can require the use of personal, societal and environmental resources. These examples highlight that resource use today, can have implications for future resource availability and demand. Resource use can also prove to be a positive process, for example, NHS staff are a high-value resource and making the best use of their time is more likely to provide job satisfaction and support their well-being.



**Personal, societal and environmental resource use associated with healthcare**

Personal (patient)	The burden of treatment, discrimination
Societal	Health and social care, the burden of care (for carers), loss of productivity, welfare and pension costs
Environmental	Carbon, pollutants

**Focused on Outcomes not Outputs:** Value should focus on outcomes that matter and make a difference to patients. Defining outcomes, reframing services to measure and prioritise outcomes that matter is essential to increasing value. Collecting data about experiences and outcomes has gained currency in the NHS in recent years, but a tendency remains for commissioners and providers to measure structures and processes rather than outcomes. <sup>[41]</sup> Measuring outcomes, though, comes with new challenges. For example, engaging with patients to identify outcomes that matter to them, and finding the resources to collect and analyse outcomes, which may occur sometime after clinical contact has ended require new ways of working.

**Equity:** Value in the NHS must take account of the inherent tension between individual patient and population needs. Obtaining value requires being “proportionate”, “fair” and “equitable”. Attaining value in systems with fixed available resource, therefore, requires judgements about the relative value of different interventions and technologies and their use across the population. Value-based decisions have wider social implications: a view supported by NICE, which describes two types of value judgements - social and scientific. <sup>[42]</sup>

**Value represents a relationship:** Value is a relationship between resources, outcomes and context. Focusing on only one part of this relationship, such as outcomes, will be insufficient to increase value in the NHS.

### What do we mean by value-based healthcare in the NHS?

The value in a universal healthcare system relates the health outcomes and experiences achieved to the resources used in the context of the services provided and the population served. How we define and measure value, therefore, varies depending on the context. The emphasis should, therefore, be to define value-based healthcare and describe its most essential characteristics in a way that is meaningful to everyone, from individual patients to national organisations, and from prevention to end of life care. We propose that:

***Value-based healthcare is the equitable, sustainable and transparent use of the available resources to achieve better outcomes and experiences for every person.***

#### **“Equitable, sustainable and transparent”**

✓ Resources are used to achieve better outcomes and experiences for every individual in the population in a way that is proportionate and fair. Value-based healthcare takes the wider impact of resource use and allocation into account, recognising that there are opportunity costs to resource use in the NHS and that healthcare has an important role to play in reducing health inequalities.

✓ The available resources are used in a way that will not compromise the availability of resources (financial and environmental) for the future.

✓ Judgements about resource allocation, resource use and about the outcomes and experiences that NHS organisations prioritise and measure are explicit, open and honest throughout the system. Transparency in decision making is part of the NHS constitution. The National Institute for Health and Care Excellence has demonstrated the importance of a transparent approach or “accountability for reasonableness” in resource allocation decisions [43].

### “Use of the available resources”

- ✓ The allocation and application of the resources that are available to the system, many of which may not be monetised, are defined and measured.
- ✓ Decision makers recognise that resource use in itself can be a positive outcome, contributing to, for example, staff well-being, the wider community and social and physical environments.
- ✓ The way that resources are allocated and applied is reported in a meaningful way and fed back into decision-making processes to improve evidence and justify the future investment, or changes to the investment of resources, including opportunity costs.

### “Outcomes and experiences for every person”

- ✓ Definitions of the most important outcomes and experiences are available for the service being delivered.
- ✓ The most important outcomes and experiences for every person are defined by the needs and preferences of the patients, the public and society using the best available evidence.
- ✓ Outcomes and experiences are measured, reported in a meaningful way and fed back into decision-making processes to justify the future investment of resources, including opportunity costs.

## 2. The key challenges and barriers to value-based healthcare in the NHS

<p><b>1. Better data:</b> The problems of defining, measuring and sharing data about resource use (including staff, patient and carer time) <u>and</u> outcomes and experiences that matter to patients are significant barriers to increasing value. The availability of data and analytical capability to measure both outcomes and resources offered by NHS organisations is currently limited.</p>
<p><b>2. Better evidence:</b> Understanding what works to increase value requires better evidence about what happens in the real world of the NHS, i.e. effectiveness, not efficacy. Knowing what works provides useful evidence to feed into decision making about resource use and allocation.</p>
<p><b>3. Describing the Journey to Value:</b> In the absence of whole-scale change, pragmatic approaches to increase value are happening across the NHS without a clear map. A step by step guide for programmes to increase value that is flexible to scale and focus would be helpful.</p>
<p><b>4. Multi-disciplinary Engagement:</b> Increasing value in practice must be multidisciplinary and involve all stakeholders, especially including patients. Multiple skills are needed, and many professional groups must be engaged. But value means different things to different people/stakeholders, and there are multiple perspectives at any one time.</p>
<p><b>5. A Value-based culture:</b> There is a need to unify language, culture and behaviour around value to gain currency in the NHS. Language about value is not socialised at board levels as ‘normal’. There is a common misconception that programmes to increase value are simply looking for cost-efficiencies. Large-scale action to increase value in the NHS will require system-wide behaviour change, individual clinical behaviour change <u>and</u> culture change.</p>
<p><b>6. A Value-based System:</b> The culture of the NHS will need to change dramatically to focus on delivering value. Financial constraints, performance targets, staff burnout and competing priorities are identified distractors and barriers to successfully implementing value-based improvements. The absence of accountability, levers and incentives for value in a system with a collective “rescue” culture make it challenging to make value a priority.</p>

## CASE STUDY: Increasing Value in COPD Care

Aneurin Bevan University Health Board (ABUHB) has an annual budget of £1.1 billion and serves a population of over 600,000 people in South East Wales. Prevalence rates of Asthma and COPD in this area are similar to the Welsh average.

### What was the value problem?

£17.3 million was spent on respiratory drugs in Gwent in 2014/15, of which £16 million was inhaled therapy for Asthma and COPD. 65% of this prescribing spend was on Inhaled Corticosteroids (ICS). Approximately 45% of ICS items were prescribed as high strength products. These patterns of prescribing appeared to be out of step with national guidelines for the management of Asthma and COPD and prescribing costs were disproportionately high. ABUHB still had a higher rate of admissions/ procedures for COPD and Asthma than other parts of Wales.

In 2014/15 Respiratory physicians, general practitioners, pharmacists, patients, third sector and finance colleagues collaborated to examine the available data, identify the main issues, understand the value problem by considering how resources were distributed across the system and develop solutions.

Between 2014/15 and 2016/17 ABUHB has reduced respiratory prescribing spend by £1.3M. The proportion of high strength Inhaled corticosteroids prescribed has also decreased from 39% in 2014 to 23% in 2017.

A significant challenge faced by this project was the availability of data to understand the problem and to demonstrate an improvement in outcomes. For example, it was not possible to distinguish prescribing related to asthma from prescribing related to COPD from the available data and, at the end of the project, proxy indicators were used to assess outcomes. ABHUB have subsequently begun a programme to systematically measure patient-reported outcome measures and are now measuring outcomes in about 20 areas. This is only possible with the patient being central in the design and implementation of the systems which support the collection of PROMs.

## 3. Skills and training needed to deliver value-based healthcare

Common challenge	Skills and Training Gap
<b>Better data:</b>	<ul style="list-style-type: none"> <li>- The analytical capability to define and measure health outcomes and experiences with patients in the national and local context.</li> <li>- The analytical capability to define and measure resource use in the national and local context.</li> <li>- Communication skills to disseminate information to NHS managers, healthcare workers, patients and the public.</li> </ul>
<b>Better evidence:</b>	<ul style="list-style-type: none"> <li>- Skills and knowledge to translate existing evidence into programmes to increase value, and to evaluate programmes designed to increase value.</li> <li>- Communication skills to disseminate new evidence from programme evaluations.</li> </ul>
<b>Describing the Journey to Value:</b>	<ul style="list-style-type: none"> <li>- The capacity to identify and prioritise 'value problems' (i.e. aspects of care in which value can be improved).</li> <li>- Knowledge synthesis to provide a guide to the process of increasing value that could apply at an organizational level or for smaller systems of care.</li> </ul>

<b>Multi-disciplinary Engagement:</b>	- Training and skills development in value is needed for a range of different professional groups, from directors to managers to clinicians to finance people. - Effective communication skills to achieve “buy-in” from patients, the public and disparate groups of professionals.
<b>A Value-based culture:</b>	- Training in value-based healthcare, leadership skills, understanding culture, behaviour and the process of culture change to increase value.
<b>A Value-based System</b>	- Skills and knowledge in healthcare systems and their role in increasing value.

## Conclusion

Improving health outcomes as a goal in itself is worthy but cannot be achieved at any cost in a health system with a fixed budget. Managing the use of financial resources is essential in a health service with budgetary pressures, but cost efficiencies can be misplaced. The relationship between health outcomes with resource use, resource allocation and context must be understood to make good decisions. A common language to articulate this relationship is needed, if value-based healthcare is to be embraced in the NHS. We suggest that value-based healthcare is defined as **the equitable, sustainable and transparent use of the available resources to achieve better outcomes and experiences of care for every person.**

Implementing value-based healthcare will require system change and for new behaviours and culture to become the norm in the NHS. From our analysis, we make the following recommendations for patients and professionals in the NHS who are interested in increasing value at a local or national level:

1. Adopt a common terminology so that every person involved in healthcare, including patients, has a shared understanding of what value-based healthcare is.
2. Identify and communicate unwarranted variations in healthcare to every person, ensuring genuine transparency about why value-based healthcare is essential, and why realistic decisions based on the available resources are required.
3. Recognize and develop strategies to overcome barriers to implementing value-based healthcare at the individual, team and organisational level.
4. Build capacity and capability to translate and implement the best available research evidence into effective action to increase value.
5. Develop the necessary skills in value-based healthcare by training staff in how to measure outcomes, patient experience and resource use
6. Ensure programmes to increase value are monitored and evaluated to provide better evidence about what is and isn't effective
7. Facilitate better communication and dissemination about what works in increasing value at a local and national level.

There are many new and existing programmes and incentives: the NHS England Long Term Plan, <sup>[44]</sup> Realistic Medicine in Scotland <sup>[30]</sup> and Prudent Healthcare <sup>[31]</sup> in Wales have all encouraged aspects of value-based healthcare in the NHS. Value-based healthcare has yet to achieve the reach of evidence-based healthcare. Developing a common understanding of the meaning and implications of value-based healthcare, and developing the right skills and knowledge in the workforce will be essential to implementing it and delivering high-quality affordable care.

## Declaration of interest:

LH is the module coordinator of a Postgraduate course in Healthcare Value, is developing a postgraduate certificate course in Healthcare Value and is the spouse of the Director of the Evidence-Based Medicine Datalab, used as a case study in this report. AP received grants from NIHR, from NIHR School for Primary Care Research, during the conduct of the report and occasionally receives expenses for teaching Evidence-Based Medicine. SL receives grants and non-financial support from ICHOM, grants from Abbvie, non-financial support from Janssen and non-financial support from ABHI outside the submitted work. AB has co-edited a textbook titled: 'Practising Public Health: A Guide to Examinations and Workplace Application' which includes discussions of principles of public health, such as value. CH has received expenses and fees for his media work, including BBC Inside Health. He holds grant funding from the NIHR, the NIHR School of Primary Care Research Evidence Synthesis Working Group (project 390), The NIHR Oxford BRC, and the WHO. The CEBM jointly runs the [EvidenceLive](#) Conference with the BMJ and the [Overdiagnosis Conference](#) with some international partners; these are based on a non-profit model. CH is Editor in Chief of BMJ Evidence-Based Medicine and an NIHR Senior Investigator Award.

## Acknowledgements:

Thanks to the following for participating in the CEBM workshop:

Professor Gwyn Bevan - Emeritus Professor of Policy Analysis, London School of Economics  
 Dr John Harvey - Consultant in Public Health, North Staffordshire Clinical Commissioning Group  
 Joni Jabbal - Researcher - Policy, The King's Fund

Julian Marks - PPI Contributor

Professor Jonathan Michie - President, Research Centre Director and Professor of Innovation & Knowledge Exchange, Kellogg College

Dr Tim Wilson - Managing Director, Oxford Centre for Triple Value Healthcare Ltd and Honorary Fellow, Nuffield Department of Primary Care Health Sciences, University of Oxford

And to

Sir Professor Muir Gray - Founding Director, Oxford Centre for Triple Value Healthcare Ltd and Visiting Professor in the Nuffield Department of Surgical Sciences at the University of Oxford

## Funding

The meeting was funded by an NIHR Senior Investigator Award to Carl Heneghan. The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

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